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Projections of Demand for and Costs of Social Care for Older People and Younger Adults in England, 2015 to 2035

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Material from the Family Resources Survey, the General Household Survey and the Health Survey for England is crown copyright and has been made available via the UK Data Archive.

The analysis set out in this report is the responsibility of the authors and does not necessarily represent the views of the Department of Health.

Abstract

This paper presents updated projections prepared for the Department of Health and the Office for Budget Responsibility (OBR) of demand for long-term care for older people and younger adults in England to 2035 and associated future expenditure. The projections were produced using updated versions of the Personal Social Services Research Unit's (PSSRU) aggregate long-term care projections models. The projections cover publicly funded social care for older people and younger adults and for older people only privately funded social care.

The key findings of the research are:

- Public expenditure on social services for older people is projected to rise under the current funding system from around £6.9 billion (0.43% of GDP) in 2015 to £17.5 billion (0.69% of GDP) in 2035 at constant 2015 prices and under a set of base case assumptions about trends in the drivers of long-term care demand and in the unit costs of care services;
- Public expenditure on social services for younger adults is projected to rise under the current funding system from around £8.4 billion (0.53% of GDP) in 2015 to £18.4 billion (0.73% of GDP) in 2035 at constant 2015 prices and under a set of base case assumptions about trends in the drivers of long-term care demand and in the unit costs of care services;
- This base case projection is sensitive to assumptions about future trends in mortality and disability rates and in the real unit costs of care.

These findings need to be treated with some caution. They are based on a set of assumptions about future socio-economic and demographic trends. They relate to current patterns of care and the current funding system and do not take account of the funding reforms which the government originally planned to introduce in April 2016 and have postponed to 2020. They do not allow for the potential impact of rising expectations or other behavioural changes.

Projections of Demand for and Costs of Social Care for Older People and Younger Adults in England, 2015 to 2035

Introduction

This paper presents updated projections of demand for social care for older people (aged 65 and over) and younger adults (aged 18 to 64) in England to 2035 and associated future expenditure. They cover publicly funded social care for both age groups and privately funded social care for older people. They cover assessments, community-based services and residential care.

The projections were produced using updated versions of the Personal Social Services Research Unit's (PSSRU) aggregate long-term care projections models. The versions of the models used here have a base year of 2015 and incorporate the latest official population projections and projections of Gross Domestic Product (GDP) that were available in May 2015.

Description of the PSSRU long-term care projections models

The PSSRU long-term care projections models aim to make projections of four key variables: the future numbers of disabled older people and younger adults, the likely level of demand for long-term care services and disability benefits, the costs associated with meeting this demand and the social care workforce required. The models – one for older people and one for younger adult groups - are cell-based (macro-simulation models) and take the form of Excel spread-sheets.

The models do not make forecasts about the future. They make projections on the basis of specific assumptions about trends in such variables as future mortality rates and disability rates. The approach involves simulating the impact on demand for care and support of specified changes in demand drivers or specified changes in policy. It does not involve forecasting future policies or future patterns of care. This means that the projections reported in this paper should be treated as indications of likely future expenditures on care and support if policies are unchanged and drivers of demand follow the specified trends. They are not forecasts: in practice not only may drivers of demand not follow the assumptions but policies may change. Since the purpose of the projections is to inform policy development it would not be helpful to take account of views about possible policy changes.

The models are updated regularly as new data become available, in particular population projections, data on numbers of people in care homes and numbers of users of home care services, data on social care expenditure and estimates of the unit costs of care. The version of the models that have been used to make the projections in this paper utilises official 2012-based population (ONS 2013) and 2008-based marital status projections (ONS 2010), data from the 2001/2 General Household Survey, the 2005 PSSRU survey of older care home admissions (Darton *et al.* 2006), March 2014 data on residential care and home-based care, expenditure data for 2013/14 and unit costs adjusted to 2015/16 prices (Health and Social Care Information Centre 2014). Data and methods are discussed further in the Annex and in Snell *et al.* (2011) and Wittenberg *et al.* (2006, 2011).

PSSRU have collaborated with the Health Economics Group at the University of East Anglia (UEA) in a number of studies of charging for social care. PSSRU and UEA have jointly produced projections of expenditure on social care for older people (but not younger adults) through innovative linkage between the PSSRU model and the UEA Caresim model. CARESIM is a microsimulation model which uses a sample of people aged 65+ living in England from the UK Family Resources Survey (FRS) to simulate how much sample members would need to contribute to the costs of their care, should they need care, under the current or variant funding systems.

While new Caresim analyses were not conducted specifically to produce the updated projections presented in this paper, the projections set out here do draw on Caresim projections conducted for other recent studies. These relate to trends in:

- The proportion of older people by age group, gender and household composition who own their home,
- The proportion of older service users, by type of care package, who are required to fund their own care privately under the provisions of the current means test,
- The proportion of the gross weekly costs of publicly funded care, by type of care package, which older service users are required to meet in user charges.

Base case assumptions

The models produce projections on the basis of specific assumptions about future trends in the key drivers of demand for long-term care. The main assumptions used in the base case are summarised in box 1 below. The base case projections take account of expected changes in factors exogenous to long-term care policy, such as demographic trends. They hold constant factors endogenous to long-term care policy, such as patterns of care and the funding system. The base case is used as a point of comparison when the assumptions of the model are subsequently varied in alternative scenarios.

Box 1: Key assumptions of the base case of the PSSRU model

- The number of people by age and gender changes in line with the Office for National Statistics (ONS) 2012-based principal population projections.
- Marital status rates change in line with GAD 2008-based marital status and cohabitation projections except that they remain constant for people with learning disability.
- There is a constant ratio of single people living alone to single people living with their children or with others and of married people living with partner only to married people living with partner and others.
- Prevalence rates of disability in old age by age group (65-69, 70-74, 75-79, 80-84, 85) and gender remain unchanged, as reported in the 2001/2 General Household Survey (GHS) for Great Britain.
- Prevalence rates of learning disability by age and gender change in line with projections by Emerson and Hatton (2008).Prevalence rates of physical disability by age and gender remain constant as reported in the 1996/7 Family Resources Survey (FRS).
- Home-ownership rates for older people, as reported in the 2001/2 Family Resources Survey (FRS), change in line with projections produced by the UEA Caresim model.
- The proportions of people receiving informal care, formal community care services, residential care services and disability benefits remain constant for each sub-group by age, disability and other needs-related characteristics.
- The proportion of older care recipients whose care is privately funded varies in line with projections from the UEA Caresim model.
- The proportion of the costs of publicly funded care met by older service users through user charges also changes in line with projections from the UEA Caresim model.
- Health and social care unit costs remain constant in real terms to 2015 and then rise by 2.2% per year in real terms (but non-labour non-capital costs remain constant in real terms).
- Real Gross Domestic Product rises in line with Office for Budgetary Responsibility projections (OBR 2014).
- The supply of formal care will adjust to match demand and demand will be no more constrained by supply in the future than in the base year.

There is ample scope to debate these base case assumptions. It could be argued for example that mortality rates in old age will fall more rapidly than official projections, disability rates may rise (or fall), the supply of informal care by adult children may not rise in line with needs, the supply of residential care may not rise in line with severe disability and/or average earnings in the care sector may not rise by as much as 2.2% per year in real terms from 2015. We have conducted a wide range of sensitivity analyses on these issues in this and previous studies – see for example Wittenberg *et al*. (2006, 2011). The Department of Health requested sensitivity analyses specifically on variant population projections and trends in disability, as reported below.

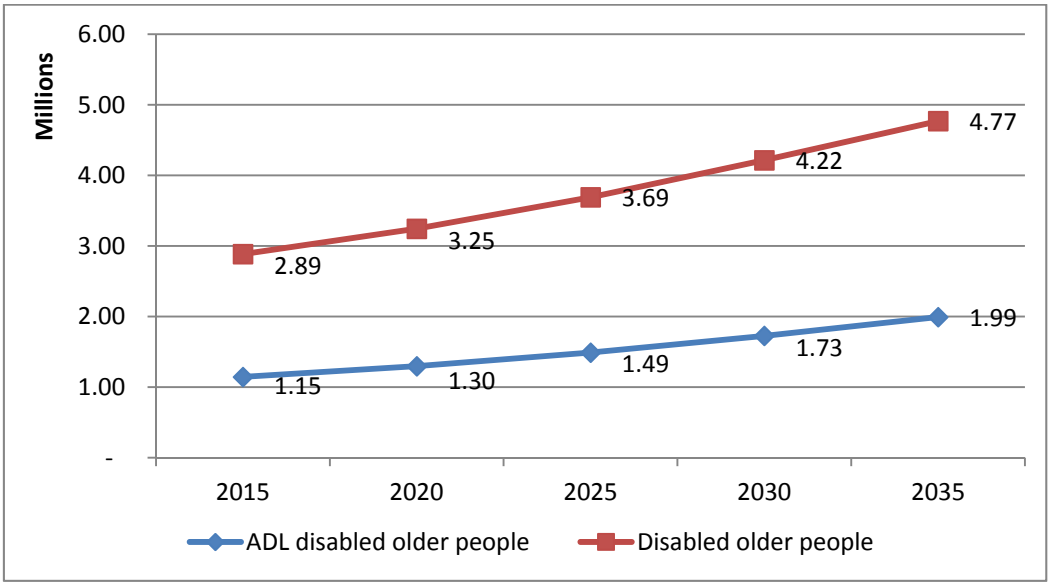
The Department of Health asked us to produce projections under the current funding system to feed into their own modelling of the proposed reforms which were due to be implemented in April 2016 and have meanwhile been postponed to 2020. These include introduction of a life-time cap on care costs of £72,000. We have set out estimates of the costs of the reforms in respect of older people in Hancock *et al.* (2013): our estimate was that the Government's plans would add just under £2 billion to public expenditure on long-term care for older people by 2030 (at 2010 prices).

Projections for older people under base case assumptions

The ONS 2012-based principal population projections for England project that the numbers of people aged 65 or over will rise from 9.7 million in 2015 to 14.5 million in 2035, an increase of 49%. The numbers of those aged 85 or more are projected to rise faster during this period, by over 122%, from 1.3 million in 2015 to 2.9 million in 2035. Much of this increase is a result of a projected rise in male life expectancy.

Under the base case assumptions, the numbers of disabled older people, defined as those unable to perform at least one instrumental activity of daily living (IADL) or having problems with at least one activity of daily living (ADL), would rise by 65% between 2015 and 2035, from around 2.9 million to around 4.8 million. The number of older people with more severe disability, that is, needing help with one or more ADL tasks, would increase by 74% from 1.15 million in 2015 to 2.0 million in 2035 (Figure 1).

Figure 1 Projected number of disabled older people in England 2015-2035



The numbers of disabled older people in households receiving informal care are projected to increase by 63%, from around 2.2 million in 2015 to 3.5 million in 2035. The numbers of disabled older people receiving care from a spouse or partner are projected to increase faster than the numbers receiving care from an adult child, under base case assumptions. Yet care by children will still need to increase by over 60% over the next 20 years, if the proportion of disabled older people (by age, gender and marital status) receiving care from their children is to remain the same as it is today. Whether the supply of care by children will actually rise in line with need is very uncertain (Pickard *et al.* 2007, 2015).

The number of older users of local authority funded home care services or direct payments would need to rise by 82%, from 257,000 in 2015 to 468,000 in 2035, to keep pace with demographic pressures (Table 1). The number of users of privately funded home care is projected to rise less rapidly, by 49% over this period. The number of older people in local authority funded residential care would need to rise by 49%, from 172,000 in 2015 to 257,000 in 2035 to keep pace with demographic changes. The number of privately funded residents is projected to rise by 110% over this period. The main reason for this difference is the projected rise in the proportion of older people who own their own home and so are generally not eligible for local authority support.

Table 1: Projected number of older people using social care, 2015-2035, England, under base case assumptions, in thousand persons

	2015	2020	2025	2030	2035	% growth 2015-2035
Direct payment users	45.5	50.8	56.9	66.3	74.4	63%
Home care users						
Publicly funded users	211.3	239.0	280.9	335.7	393.7	86%
Privately funded users	93.9	104.9	115.5	130.0	139.5	49%
Care home residents						
Publicly funded residents	172.1	187.1	208.4	228.1	257.1	49%
Privately funded residents	157.1	184.0	220.3	272.0	330.4	110%

Public expenditure on social services for older people, net of user charges, is projected to rise by 155% under the current funding system from around £6.9 billion (0.43% of GDP) in

2015 to £17.5 billion (0.69% of GDP) in 2035 at constant 2015 prices (Table 2). Expenditure on community-based care is projected to rise much more rapidly than expenditure on residential care (203% as against 116%) over the period 2015 to 2035 (Table 3).

Private expenditure is projected to rise from £6.8 billion in 2015 to £19.9 billion in 2035, an increase of 191%. Total expenditure on social services for older people is projected to rise by 162%, from £16.2 billion (1.02% of GDP) in 2015 to £42.4 billion (1.68% of GDP) in 2035 at constant 2015 prices. It should be noted that the figures for private expenditure are estimates drawn from various sources on the numbers of privately funded care home residents, the numbers of privately funded home care users and the weekly costs of privately funded care. This means that the projections for private expenditure should be treated with caution.

Table 2: Projected expenditure on social care for older people, 2015-2035, England, under base case assumptions, in £bn at constant 2015 prices

	2015	2020	2025	2030	2035	% growth 2015-2035
Social services public net expenditure	6.9	8.4	10.7	13.6	17.5	155%
User charges	2.5	3.0	3.5	4.2	5.0	100%
Private expenditure	6.8	8.7	11.4	15.3	19.9	191%
Total expenditure	16.2	20.1	25.7	33.1	42.4	162%
Total spend as % of GDP	1.02%	1.13%	1.29%	1.47%	1.68%	64%

Table 3: Projected net public expenditure on social care for older people, 2015-2035, England, under base case assumptions, in £bn at constant 2015 prices

	2015	2020	2025	2030	2035	% growth 2015-2035
Community care	2.6	3.3	4.4	6.0	7.9	203%
Residential care	3.2	3.8	4.6	5.5	6.8	116%
Assessment and other services	1.1	1.3	1.7	2.1	2.7	152%
Net social services expenditure	6.9	8.4	10.7	13.6	17.5	155%
Net expenditure as % of GDP	0.43%	0.47%	0.54%	0.61%	0.69%	60%

Projections for younger adults under base case assumptions

According to ONS 2012-based principal population projections for England, the number of people aged 18 to 64 will rise by 3.9% between 2015 and 2035, from 33.4 million in 2015 to 34.6 million in 2035.

Under the base case assumptions, the number of learning disabled younger people defined using Emerson's definition of learning disability from his 2005 study would rise by 65% between 2015 and 2035, from around 255,000 in 2015 to around 420,000 in 2035. This projected increase is clearly higher than the rate of change in the size of the overall population, and is derived from a central estimate of the change in the number of adults eligible for care services (Emerson 2008). The central estimate assumes that all adults with critical or substantial levels of need and 50% of those with moderate needs are eligible for care services. The projected increase takes into account changes in mortality within the disabled population and the characteristics of new entrants into adult services transitioning from children's services.

The number of physically and sensorily impaired younger people would rise under base case assumptions by 4.7% between 2015 and 2035, from around 2.95 million to 3.09 million. This is on the basis of unchanged prevalence rates by age and gender. Projections have not been produced for numbers of younger adults with mental health problems or other conditions. Numbers of service recipients and associated expenditure accounted for by this group are

projected to increase in line with changes in the overall population. Some of those with learning or physical disabilities may also have mental health problems.

The numbers of learning disabled younger adults in households receiving informal care are projected to increase by 73%, from approximately 145,000 in 2015 to around 250,000 in 2035. The numbers of physically disabled younger adults in households receiving informal care are projected to increase by 4.2%, from approximately 915,000 in 2015 to around 950,000 in 2035. This is on the basis that the probability of receipt of informal care remains constant by age, gender, household composition and severity of disability.

The numbers of learning disabled users of local authority home care services or direct payments would need to rise by 60%, from 72,000 in 2015 to 116,000, in 2035 to keep pace with demographic pressures (Table 4). The numbers of physically disabled users of local authority home care services would need to rise by 7%, from 30,600 in 2015 to 32,600 in 2035. The numbers of users with mental health needs of home care services would need to rise by 4%, from 10,100 in 2015 to 10,600, in 2035 to keep pace with demographic pressures.

The number of learning disabled younger adults in local authority funded residential and nursing care would need to rise by 50%, from 59,500 in 2015 to 89,300 in 2035 in order to keep pace with demographic pressures (Table 4). The number of physically disabled younger adults in local authority funded residential and nursing care would need to rise by 12%, from 8,900 in 2015 to 10,000 in 2035. The number of younger adults with mental health needs in supported residential and nursing care would need to rise by 6%, from 11,100 in 2015 to 11,800 in 2035 in order to keep pace with demographic pressures.

Table 4: Projected numbers of younger adults using publicly funded social care, 2015-2035, England, in thousand persons

	2015	2020	2025	2030	2035	% growth 2015-2035
Learning disability clients						
Home care	35.6	40.7	44.8	49.6	53.6	51%
Direct payments	36.5	46.7	52.8	58.1	62.1	70%
Care home residents	59.5	67.0	73.5	81.9	89.3	50%
Physical disability clients						

Home care	30.6	31.9	32.8	32.8	32.6	7%
Direct payments	37.5	38.3	38.6	38.8	39.1	4%
Care home residents	8.9	9.5	10.0	10.0	10.0	12%
Mental health clients						
Home care	10.1	10.5	10.7	10.6	10.6	4%
Care home residents	11.1	11.6	12.0	12.0	11.8	6%

Net public expenditure on social care (net of user contributions) for younger adults is projected to rise by 118%, from £8.4 billion in 2015 to £18.4 billion in 2035 at constant 2015 prices (Table 5). This is on the basis that the real unit costs of care rise by 2.2% per year from 2015 onwards but that user contributions remain constant in real terms. This amounts to a rise from 0.53% of GDP in 2015 to 0.73% of GDP in 2035. Gross public expenditure on social care is projected to rise by 114%, from £8.9 billion in 2015 (0.56% of GDP) to £19.1 billion in 2035 (0.75% of GDP) at constant 2015 prices.

Table 5: Projected public expenditure on social care for younger adults, 2015-2035, England, in £bn at constant 2015 prices

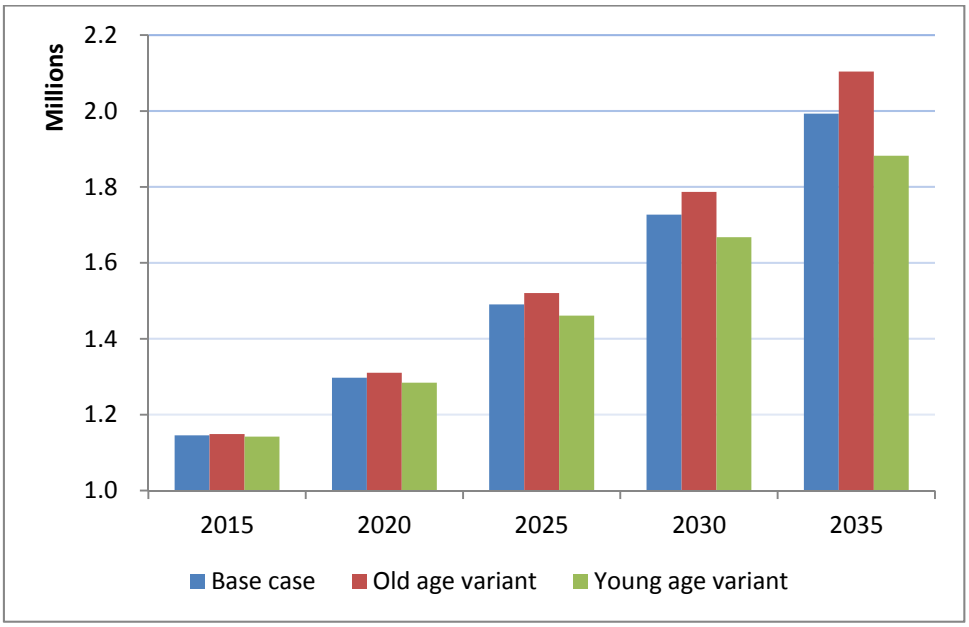
	2015	2020	2025	2030	2035	% growth 2015-2035
Community care	3.0	3.8	4.6	5.6	6.6	122%
Care home	3.9	4.9	5.9	7.3	8.8	125%
Assessment and other services	1.6	1.9	2.2	2.6	3.0	95%
Net social services expenditure	8.4	10.6	12.8	15.5	18.4	118%
Net expenditure as % of GDP	0.53%	0.59%	0.64%	0.69%	0.73%	37%

Sensitivity of projections for older people to variant population projections

We investigated the sensitivity of our projections of social care for older people to assumptions about trends in migration and mortality through use of three of the ONS variant population projections: the old age variant, young age variant and low migration variant.

The number of ADL disabled older people is projected to rise from 1.1 million in 2015 to 2.1 million in 2035 under the old age variant or 1.9 million under the young age variant compared with 2.0 million under the base case (principal population projection) (Figure 2). The low migration variant differs little from the base case: for older people the low migration variant population projections do not differ much from the principal projection.

Figure 2: Projected number of ADL disabled older people in England 2015-2035 under different population projection assumptions



The projected number of publicly funded home care users in 2035 would be around 5.5% higher under the old age variant and 5.5% lower under the young age variant than under the base case (Table 6). The equivalent figure for publicly funded residential care is 6.5%. Net public expenditure on social care for older people is projected to rise between 2015 and 2035 by 169% under old age variant and by 140% under the young age variant as against 155% under the base case (Table 7).

Table 6: Projected numbers of older people using publicly funded social care, 2015-2035, England, under different assumptions on future population change, in thousand persons

	2015	2020	2025	2030	2035	% growth 2015-2035
Home care and direct payment users						
Old age structure variant	257.6	292.8	344.8	416.0	494.3	92%
Young age structure variant	256.0	286.8	331.0	387.9	441.7	73%
Low migration variant	256.8	289.6	337.4	401.1	466.6	82%
Base Case	256.8	289.8	337.9	402.0	468.1	82%
Care home residents						
Old age structure variant	172.8	189.4	213.4	237.4	273.6	58%
Young age structure variant	171.5	184.8	203.4	218.9	240.6	40%
Low migration variant	172.1	187.0	208.1	227.7	256.4	49%
Base Case	172.1	187.1	208.4	228.1	257.1	49%

Table 7: Projected public expenditure on social care for older people, 2015-2035, England, under different assumptions on future population change, in £bn at constant 2015 prices

	2015	2020	2025	2030	2035	% growth 2015-2035
Net social services expenditure						
Old age structure variant	6.9	8.5	10.9	14.2	18.5	169%
Young age structure variant	6.8	8.3	10.5	13.1	16.4	140%
Low migration variant	6.9	8.4	10.7	13.6	17.4	154%
Base Case	6.9	8.4	10.7	13.6	17.5	155%
Net expenditure as % of GDP						

Old age structure variant	0.43%	0.48%	0.55%	0.63%	0.73%	69%
Young age structure variant	0.43%	0.47%	0.52%	0.58%	0.65%	51%
Low migration variant	0.43%	0.47%	0.54%	0.61%	0.69%	59%
Base Case	0.43%	0.47%	0.54%	0.61%	0.69%	60%

Sensitivity to assumptions about trends in functional disability in old age

The sensitivity analysis reported in Wittenberg *et al.* (2006) showed that projected future demand for social services for older people is sensitive to assumptions about future prevalence rates of disability as well as to assumptions about future mortality rates. It also showed that projected future public expenditure on care for older people is sensitive to assumptions about future rises in the real unit costs of services, such as the cost of an hour's home care. The sensitivity analysis reported here concentrates on trends in disability.

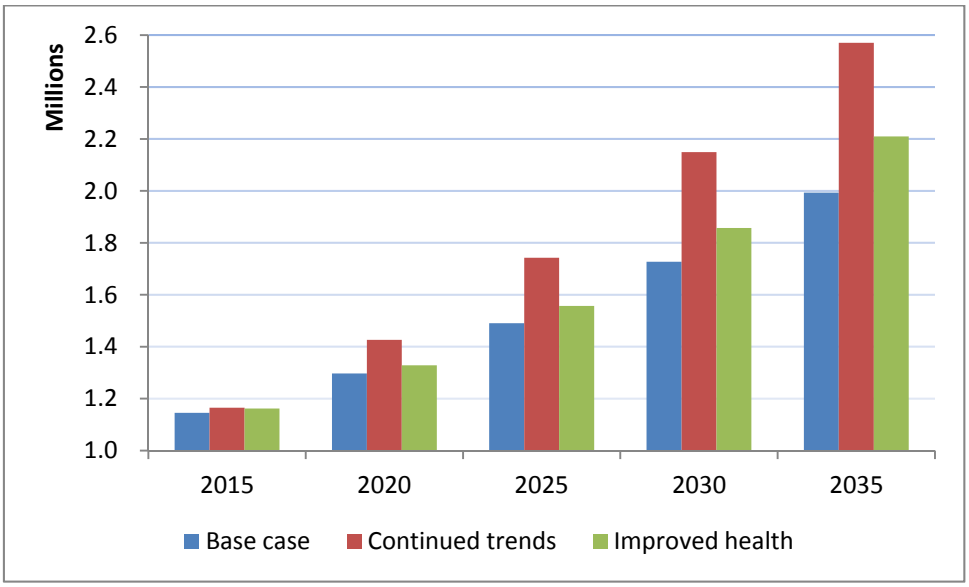
There are different views about whether age-specific disability rates can be expected to rise, fall or remain broadly constant in the future (Bone *et al.* 1995, Dunnell 1995). Constant age-specific disability rates may be regarded as a neutral assumption and this is our base case. Yet, if age-specific disability rates remain constant while life expectancy rises, the number of years with disability will rise as well as the number of years without disability.

The numbers of disabled older people in the future will depend on the disabling diseases they suffer from and whether optimal treatments to alleviate or postpone the disablement are both available and widely diffused throughout the population in need. As part of the evidence for the Wanless social care review (Jagger *et al*. 2006) and subsequent projects, the PSSRU older people's model has been linked to POPSIM, an epidemiological model (see, for example, Jagger *et al*. 2009a) that simulates how changes in the prevalence, disablement and mortality consequences of chronic conditions will affect future disability rates. As well as considering individual scenarios for the specific diseases - dementia, arthritis, stroke and coronary heart disease - Jagger *et al*. (2009b) have developed combined scenarios, including:

- **continued current trends** – continuation of current trends in chronic conditions associated with disability, which results in increasing disability prevalence rates among older people
- **improving population health** – there is a decline in risk factors, particularly smoking and obesity, and in the prevalence of disabling diseases.

The number of ADL disabled older people is projected to rise from 1.2 million in 2015 to 2.6 million in 2035 under the continued trends scenario or 2.2 million under the improved health scenario compared with 2.0 million under the base case. It is important to note that even under the improved health scenario the number of disabled older people would rise faster than under the base case assumption of constant disability prevalence rates (Figure 3).

Figure 3: Projected number of ADL disabled older people in England 2015-2035 under different assumptions about future disability prevalence



To keep pace with the rise in numbers of disabled older people the numbers in care homes would need to rise by 93% between 2015 and 2035 under the continued trends scenario or by 68% under the improving health scenario compared with 49% under the base case. The difference between the scenarios is not so great for home care. The increases necessary to meet the rising numbers of disabled older people is 101% under the continued trends scenario, 88% under the improved health scenario and 82% under the base case (Table 8).

As set out above, under the base case net social services expenditure on older people is projected to rise by 155% between 2015 and 2035, from 0.43% to 0.69% of GDP to keep pace with demographic trends and real unit costs pressures. Under the continued trends scenario it is projected to rise by 199%, from 0.44% to 0.82% of GDP over the twenty year period. Even under the improved health scenario it is projected to rise by 172%, from 0.44% of GDP in 2015 to 0.74% of GDP in 2035 (Table 9).

Table 8: Projected numbers of older people using publicly funded social care, 2015-2035, England, under different assumptions on future disability trends, in thousand persons

	2015	2020	2025	2030	2035	% growth 2015-2035
Home care and direct payment users						
Continued trends	258.1	299.0	356.7	434.5	518.7	101%
Improving health	257.8	291.9	342.7	411.8	485.1	88%
Base Case	256.8	289.8	337.9	402.0	468.1	82%
Care home residents						
Continued trends	175.4	206.9	246.9	289.7	338.7	93%
Improving health	175.2	193.7	221.6	252.1	294.2	68%
Base Case	172.1	187.1	208.4	228.1	257.1	49%

Table 9: Projected public expenditure on social care for older people, 2015-2035, England, under different assumptions on future disability trends, in £bn at constant 2015 prices

	2015	2020	2025	2030	2035	% growth 2015-2035
Net social services expenditure						
Continued trends	6.9	9.0	11.9	15.8	20.7	199%
Improving health	6.9	8.6	11.1	14.4	18.8	172%
Base Case	6.9	8.4	10.7	13.6	17.5	155%
Net expenditure as % of GDP						
Continued trends	0.44%	0.50%	0.59%	0.70%	0.82%	88%
Improving health	0.44%	0.48%	0.56%	0.64%	0.74%	70%
Base Case	0.43%	0.47%	0.54%	0.61%	0.69%	60%

Conclusions

The models produce projections of future public expenditure on social care for older people and younger adults based on a specified set of base case assumptions. This set of assumptions seems plausible but is clearly not the only possible set. This means that the projections should not be regarded as forecasts of the future.

Public expenditure on social services for older people, net of user charges, is projected to rise by 155% under the current funding system from around £6.9 billion (0.43% of GDP) in 2015 to £17.5 billion (0.69% of GDP) in 2035 at constant 2015 prices and under a set of base case assumptions about trends in the drivers of long-term care demand and in the unit costs of care services. The equivalent for social services for younger adults is a projected rise of 118%, from £8.4 billion (0.53% of GDP) in 2015 to £18.4 billion (0.73% of GDP) in 2035 at constant 2015 prices. Total public expenditure on social services for older people and younger adults is projected to rise by 135% under the current funding system from around £15.3 billion (0.96% of GDP) in 2015 to £35.8 billion (1.42% of GDP) in 2035 at constant 2015 prices (Table 10).

Table 10: Projected public expenditure on social care for older people and younger adults, 2015-2035, England, under base case assumptions, in £bn at constant 2015 prices

	2015	2020	2025	2030	2035	% growth 2015-2035
Community care	5.6	7.1	9.0	11.6	14.5	160%
Care home services	7.1	8.6	10.5	12.8	15.6	121%
Assessment and other services	2.6	3.2	3.9	4.8	5.7	118%
Net social services expenditure	15.3	19.0	23.5	29.1	35.8	135%
Net expenditure as % of GDP	0.96%	1.06%	1.18%	1.30%	1.42%	47%

Sensitivity analyses in respect of social care for older people show that projected future public expenditure on social care for older people:

- Does not vary greatly for 2025 between the old age variant, young age variant and principal population projections, and even for 2035 the two variants different by only around 6% from the base case (principal population projection); but
- Does vary rather more significantly even for 2025 if the age-specific prevalence rates of diseases continue to vary in line with past trends (continued trends) rather than the age-specific rates of disability remaining constant (the base case); public expenditure is projected to be over 10% higher in 2025 and over 18% higher in 2035 under the continued trends scenario than under the base case.

This illustrates the importance of promoting active ageing and other measures which seek to ensure that the prevalence rates of diseases do not follow recent trends or at least that their disabling effects are mitigated. In particular, measures to prevent chronic illness, disability and dependency when people reach old age will not only help to improve people's quality of life and subjective well-being, as reported in the literature (Walker 2002, Boudiny 2013), but will also reduce the rate of increase in future public expenditure on social care of older people.

The analysis shows that the number of disabled older people receiving informal care is projected to rise by more than 60% over the next 20 years if the probability of receiving it remains constant. It is not clear however that the supply of informal care will rise to meet this demand (Pickard *et al.* 2007, Pickard 2015). Unpaid care, particularly by the adult children of disabled older people, may not increase so rapidly in future, as a result of such factors as women's rising participation in the labour market. If the supply of informal care does not increase to meet demand, the need for formal services would rise faster than under the base case.

The analysis assumes that the unit costs of care, such as the cost of an hour's home care, will rise by 2.2% per year in real terms (other than for the small element of costs which relate to food, fuel etc. rather than to labour or capital) in line with OBR projections for rises in average earnings. There is scope for debate about whether wages in the care sector will rise in line with average earnings. In particular the announcement in the July 2015 Budget of substantial rises in the next few years in the national minimum wage, to be known as the living wage, suggests that they might rise faster than average earnings in the coming few years. Clearly projections of future expenditure over a substantial period are sensitive to assumptions about rises in unit costs.

These findings need to be treated with some caution. They are based on a set of assumptions about future socio-economic and demographic trends. They do not constitute the total costs to society of long-term care. That would require inclusion of the costs of a wider range of services to a wider range of public agencies and service users and the opportunity costs of unpaid care. It should also be stressed that no allowance has been made here for changes in public expectations about the quality, range or level of care.

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Annex: Description of the PSSRU older people's long-term care projections model

The PSSRU long-term care projections model aims to make projections of four key variables: the future numbers of disabled older people, the likely level of demand for long-term care services and disability benefits for older people, the costs associated with meeting this demand and the social care workforce required.

The model does not make forecasts about the future. It makes projections on the basis of specific assumptions about future trends. The approach involves simulating the impact on demand of specified changes in demand drivers, such as demographic pressures, or specified changes in policy, such as the introduction of a lifetime cap on care costs. It does not involve forecasting future policies or future patterns of care.

The model is cell-based (a macro-simulation model) and takes the form of an Excel spread-sheet. It consists of five main parts. The first part estimates the numbers of older people with different levels of disability by age group, gender, household type and housing tenure. The second part estimates the levels of long-term care services required, by attaching a probability of receiving health and social care services to each cell, and disability benefits. The third part of the model estimates total health and social services expenditure, and, in the fourth part, total expenditure is allocated to the various sources of funding. Finally, a fifth part relates to the social care workforce.

The first part of the model divides the older population according to a number of characteristics relevant to the use of services, such as the level of functional disability (measured in terms of activities of daily living), marital status, whether living alone, with a partner or children, housing tenure, and receipt of informal care by spouses, children or others. The model uses the Office for National Statistics 2012-based population projections as the basis for the numbers of people by age band and gender in each year under consideration until 2035.

The projected older population by age band and gender are separated into disability groups. Disability is a crucial factor in considering need for long-term care, as it is disability rather than age which influences need for care. The model uses as a measure of disability the ability to perform activities of daily living (ADLs) and instrumental activities of daily living (IADLs). The section on disability in the model uses data from the 2001/2 General Household Survey (GHS). It includes six categories of functional disability, ranging from no disability to inability to perform two or more activities of daily living (ADL) without help.

The projections of household composition/informal care in the model are driven by the 2008-based ONS marital status and cohabitation projections (ONS 2010). The household type/informal care classification in the model is based, in the first instance, on de facto

marital status. Older people who are married or cohabiting are distinguished from those who are single, separated, divorced or widowed. The two marital status groups, those who are de facto married and those who are de facto single, are broken down into five household types using official national statistics and the 2001/2 GHS.

The five household type groups are then further broken down by receipt of informal care to produce an eight-fold classification by household type and informal care. Informal care in the model is based on analyses of receipt of unpaid help with domestic tasks by disabled older people using the 2001/2 GHS. Three principal sources of informal care are identified: care from children, from spouses and from others. The projections assume a steady state regarding the propensity, within household type/informal care groups, to receive care from a spouse, child, spouse and child, or others.

The model includes, for those living in private households, a simple breakdown by housing tenure, between those living in owner-occupied tenure and those living in rented accommodation. One reason for the inclusion of housing tenure is that it can be regarded as a simple proxy for socio-economic group. Another is that it is relevant, in the case of older people living alone, to the division between those who fund their own residential or nursing home care and those who are funded by their local authority. The current means test for public support in care homes generally takes account of the value of the person's home (unless it is occupied by their spouse or an older or disabled relative). This means that older home-owners who live alone generally need to fund their residential care privately, while older tenants and older home-owners living with their spouse are often eligible for public funding. The rates of home ownership, by age, gender and marital status, are from the Family Resources Survey with projected rates for future years produced by the University of East Anglia Caresim model.

The second part of the model projects the volumes of services demanded by combining the output of the first part of the model (the projected numbers of older people by disability, informal care/household type and other characteristics) with functions that assign receipt of services to each sub-group of the older population. The services covered include a range of health and social services relevant to meeting long-term care needs. Disability benefits are also included.

Use of official data on supported residents, 2001 Census data and data from PSSRU surveys of care homes enabled the proportion of disabled older people in residential home care, nursing home care and long-stay hospital care to be estimated for the model base year. The number of older people in these care settings was expressed as a proportion of the overall number of highly disabled older people (those unable to perform two or more ADLs without help or in care homes), for each subgroup by age band, gender, previous household type and previous housing tenure. These proportions were then used in making projections for future years.

The probability of receipt of each non-residential service was estimated through multivariate (logit) analysis of the 2001/2 GHS data. Logistic regression analyses were run to determine the factors associated with receipt of each of the services: local authority home help, private help, district nursing services, meals, day centre services, chiropody, and any one or more of these services (other than chiropody). In each analysis, the dependent variable was receipt of the service. The intensity of service use was not accounted for at this stage. Separate analyses were undertaken for disabled and non-disabled older people, as few non-disabled older people received services other than chiropody and private domestic help. The independent variables were age, gender, household type/informal care, housing tenure and, for the disabled sub-sample, level of disability.

Demand for non-residential services was calculated by using the fitted values from the logistic regression models as the estimated probabilities of receipt of each service by age band, disability and the other factors described above. These fitted values were then multiplied by the projected numbers of older people within each cell by age band and other needs-related circumstances to produce estimates of the numbers of service recipients. The estimated numbers of recipients of local authority home care, day care and meals were grossed to match official data.

Finally, these estimates of numbers of service recipients were multiplied by estimates of the average intensity of service receipt, i.e. the average number of home help hours or district nursing visits per recipient week. Information on intensity of service receipt by disability was obtained from the 2011 and 2012 Health Surveys for England (HSE). For local authority home care, day care and meals, the HSE data was grossed up to match the Department of Health data on average hours, sessions or meals per client week.

The third part of the model projects total expenditure on the formal services demanded, applying unit costs of formal care to the volume of services projected in the second part of the model. The fourth part of the model breaks down projected aggregate expenditure on services by source of funding: NHS, social services and service users. The costs of the health services included are assigned to the NHS. The costs of social services are divided between personal social services and service users. As there are no national data on the quantities of privately funded care, the projections for privately funded care, especially on non-residential care, need to be treated with caution as it is not possible to verify that all privately funded care is captured by the model.

Residents of residential care and nursing homes and home care users are divided into privately and publicly funded residents through analyses using the Caresim model. The breakdown for 2014 is based on official data. Privately funded residents are assumed to meet their care home fees from their own funds (including disability benefits), except that the NHS meets nursing costs in nursing homes. Expenditure on local authority funded residential care and home care is divided between local authority social services and users

on the basis of Caresim modelling. The full costs of privately funded residential and nursing home care and private domestic care and a proportion of the costs of all other social services are thus assigned to users.

Estimated net and gross expenditure on local authority funded services plus expenditure on assessment and care management is grossed to match local authority PSS EX1 expenditure data for 2013/4. The grossing factors estimated for 2013/4 are applied to all projection years.

Expenditure on disability benefits is estimated separately, by multiplying the numbers of recipients by the weekly average amounts. This expenditure is split between sums used to fund care and sums not so used through CARESIM modelling.

A fifth part of the model makes projections of the numbers of social care (but not NHS) staff required to provide the projected volume of social services, for different groups of social care staff. For care staff, it is assumed that the ratio of staff to volumes of care such as home care hours remains constant over time. For administrative and managerial staff, it is assumed that the ratio of such staff to care staff remains constant over the projection years.